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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,622	02/18/2004	Jun Kitakado	038440-0105	9103

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EXAMINER	
TIMORY, KABIR A	
ART UNIT	PAPER NUMBER
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/779,622	KITAKADO, JUN	
	Examiner	Art Unit	
	Kabir A. Timory	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :9/18/2006, 11/20/2006 & 2/18/2004.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 20 recite a "program" which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se. Thus, in the specification it is not clearly defined how the "program" is stored in a tangible medium paragraph [63]. Moreover, claims 17-20 define "program" that ties with the "computer program" which also encompasses non-statutory subject matter and therefore does not fall within one of the four statutory classes of § 101.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohno et al. (US Patent Number 7,110,468).

Regarding claim 1:

As shown in figure 1, Ozaki discloses an adaptive array radio communication apparatus having a plurality of antennas, comprising:

- estimation means for estimating a correlation value between signals of a plurality of streams received at respective said plurality of antennas (figure 1,8, paragraph 9)
- display means for displaying said estimated correlation value between said signals of said plurality of streams (figure 1, 12), and
- antenna correlation adjustment means for causing the correlation value between said signals of said plurality of streams to be altered manually by a user (column 0005).

Regarding claim 2:

Ozaki further discloses:

- said display means displays the correlation value between said signals of said plurality of streams (column 0005).

Regarding claim 3:

Ozaki further discloses:

- said display means displays a magnitude level of the correlation value between said signals of said plurality of streams (column 0007).

Regarding claim 4:

Ozaki further discloses:

- display means can selectively display the correlation value between said signals of said plurality of streams and a magnitude level of said correlation value as a display content (figure 1, 12),
- said adaptive array radio communication apparatus further comprising display content designation means for determining the display content by said display means in accordance with designation by a user in advance (figure 1, 12).

Regarding claim 5:

Ozaki further discloses:

- said display means can selectively display the correlation value between said signals of said plurality of streams and a magnitude level of said correlation value as a display content (figure 1, 12, abstract),
- said adaptive array radio communication apparatus further comprising display content switch means for sequentially switching the display content by said display means periodically (figure 1, 12).

Regarding claim 6:

Ozaki further discloses:

- actuation means for actuating automatically said estimation means and said display means (this limitation is obvious because most communication device can automatically display the signal information such as in mobile phones) (figure 1, 12).

Regarding claim 7:

Ozaki further discloses:

- actuation means for actuating said estimation means and said display means in accordance with designation by a user (this limitation is obvious because most communication devices such as mobile phones have decoder to estimate the original signals and display the signal information in the display of the device, which can be adjusted manually by the user) (figure 1, 12).

Regarding claim 8:

As shown in figure 1, Kohno et al discloses an adaptive array radio communication apparatus having polarity of antennas comprising:

- estimation means for estimating a correlation value between signals of a plurality of streams received at respective said plurality of antennas (decoding circuit is interpreted to be the estimation means) (column 2, lines 42-47), and
- antenna correlation adjustment means for altering the correlation value between said signals of said plurality of streams such that said estimated correlation value becomes smaller (maximum likelihood estimation decoding, is interpreted to be correlation adjustment means) (column 6, lines 41-49).

Regarding claim 9:

Kohno et al further discloses:

- said antenna correlation adjustment means comprises antenna driving means for modifying an angle between a plurality of antennas (column 10, lines 3-13), and
- control means for controlling said antenna driving means such that an angle between said plurality of antennas is modified to cause said correlation value to

become lower than a predetermined threshold value (figure 7, 130, column 7, lines 40-53).

Regarding claim 10:

Ozaki further discloses:

- actuation means for actuating automatically said estimation means and said antenna correlation adjustment means (this limitation is obvious because most communication device can automatically display the signal information such as in mobile phones) (figure 1, 12).

Regarding claim 11:

Ozaki further discloses:

- actuation means for actuating said estimation means and said antenna correlation adjustment means in accordance with designation by a user (this limitation is obvious because most communication devices such as mobile phones have decoder to estimate the original signals and display the signal information in the display of the device, which can be adjusted manually by the user) (figure 1, 12).

Regarding claim 12:

As shown in figure 1, Ozaki discloses an antenna correlation display method of an adaptive array radio communication apparatus having a plurality of antennas, said method comprising the steps of:

- estimating a correlation value between signals of a plurality of streams received at respective said plurality of antennas (figure 1, 8, paragraph 9), and

- displaying said estimated correlation value between said signals of said plurality of streams (figure 1, 12).

Regarding claim 13:

Ozaki further discloses

- said display step displays the correlation value between said signals of said plurality of streams (column 0007).

Regarding claim 14:

Ozaki further discloses

- said display step displays a magnitude level of the correlation value between said signals of said plurality of streams (column 0007).

Regarding claim 15:

As shown in figure 1, Kohno et al discloses an antenna correlation adjustment method of an adaptive array radio communication apparatus having a plurality of antennas, said method comprising the steps of:

- estimating a correlation value between signals of a plurality of streams received at respective said plurality of antennas (decoding circuit is interpreted to be the estimation means) (column 2, lines 42-47), and
- altering the correlation value between said signals of said plurality of streams such that said estimated correlation value becomes smaller (maximum likelihood estimation decoding, is interpreted to be correlation adjustment means) (column 6, lines 41-49).

Regarding claim 16:

Kohno et al further discloses:

- said correlation value altering step further includes the step of modifying an angle between said plurality of antennas such that said correlation value becomes lower than a predetermined value (figure 7, 130, column 7, lines 40-53).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozaki et al. (JP Patent Number 09205390).

Ozaki et al discloses all of the subject matter as described above except for an antenna correlation display program of an adaptive array embodied in a computer-readable medium.

However, Ozaki et al teaches the antenna correlation adjustment method of a communication device with proceeding can be implemented in software stored in a computer-readable medium. The computer-readable medium is an electronic, magnetic, optical, or other physical device or means that can be contain or store a computer program for use by or in connection with a computer-related system or

method. One skilled in the art would have clearly recognized that the method of Ozaki et al., and Kohno et al would have been implemented in software. The implemented software would perform same function of the hardware for less expense, adaptability, and flexibility. Therefore, it would have been obvious to one ordinary skilled in the art at the time of the invention was made to use the software as taught by Ozaki et al. in the (JP Patent Number 09205390), in order to reduce cost and improve the adaptability and flexibility of the communication system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kabir A. Timory whose telephone number is (571) 270-1674. The examiner can normally be reached on Mon - Thu 6:30AM - 4:00PM & Fri 6:30AM - 3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kabir A. Timory
March 5, 2007

SHUWANG LIU
SUPERVISORY PATENT EXAMINER